

## SACRAMENTO (SMF)

### Intro and Process Overview

SMF 01-IP	Provide a section on process-flow diagram how to use LUFT manual
SMF 01-IP	Communication and cooperation process between Reg, RPs and Consults upfront to define steps
SMF 01-IP	Communication and cooperation between Reg, RP, Consult, and Fund
SMF 01-IP	Stakeholder creation for UNIFORM (statewide) application of manual
SMF 01-IP	Science behind SCLs or WOQs
SMF 01-IP	List of applicable state policies simplified
SMF 01-IP	Applicable regulations including St. Bd. Res. No. 92-49
SMF 01-IP	LUFT manual define scope/introduction - LUSTs, Home Heat Oil ...
SMF 01-IP	Regulatory framework
SMF 01-IP	Fiscal responsibility

SMF 01-IP	Multi-tiered approach to: characterization, risk assessment, remediation, and closure
SMF 01-IP	Roles and responsibilities
SMF 01-IP	Green technology and procedures - intro
SMF 01-IP	DEFINITIONS

### Net Environmental impact of the process (AB32) - Green Chapter

SMF 15-Sus	Green technology and procedures
SMF 04-CSM	<b>SCM</b>
SMF 04-CSM	Development and validation of SCM
SMF 04-CSM	Site conceptual models
SMF 04-CSM	Initial SCM with initial dynamic workplan for investigation

### Investigation/Assessment

SMF 06-Wkp	Dynamic WP for investigations
SMF 07-Ass	Groundwater monitoring program
SMF 07-Ass	Sensitive receptor surveys
SMF 07-Ass	Well construction
SMF 07-Ass	Defining assessment objectives
SMF 07-Ass	Soil, vapor and groundwater sampling techniques
SMF 07-Ass	GW sample collection: turbidity reduction, wells with sheen
SMF 07-Ass	Definition elements of each phase of project
SMF 07-Ass	Investigation and remediation soils only cases
SMF 07-Ass	Maximize data collection for investigation
SMF 07-Ass	Mass flux evaluation guidance
SMF 07-Ass	Soil vapor investigation
SMF 07-Ass	Concurrent soil mass and plume delineation
SMF 07-Ass	Sampling frequency and analytes
SMF 07-Ass	Defining assessment objectives

### Waste Disposal

SMF 08-Ana	<b>Analytical</b>
SMF 08-Ana	Analytical methods
SMF 08-Ana	Required chemical analyses (including methods, cleanups, and issues re: turbidity in groundwater samples)

SMF 08-Ana	Physical and chemical properties of fuel and methods to determine them
SMF 08-Ana	QA/QC
SMF 08-Ana	List some petroleum hydrocarbons that indicate a release is new.
SMF 08-Ana	<b>Data</b>
SMF 07-Ass	ID data gaps during investigation
SMF 06-Wkp	Data quality objectives
SMF 13-Clos	Agency by agency cleanup criteria
SMF 12-Rpt	GeoTracker: minimum fields to be populated and by whom
SMF 08-Ana	Reporting analytical data

SMF 09-RA	<b>Risk Management</b>
SMF 09-RA	Risk assessment: HHRA - What's included? Who can write one? Who can review one?
SMF 09-RA	HHRA: Should be tailored to match threat level of site.
SMF 09-RA	Risk assessment should be done @ - PAR, -CAP, -Closure
SMF 09-RA	Risk assessment: Max. concentration does not equal threat; @CCAP--> Buy-in to site
SMF 09-RA	closure criteria, integrate land use planning
SMF 09-RA	Risk assessment info should be conveyed to the public
SMF 09-RA	Risk-related exit criteria
SMF 09-RA	Human and ecological risk assessment
SMF 09-RA	Using institutional controls
SMF 09-RA	Mass flux evaluation for protection of water quality
SMF 09-RA	Lawrence Livermore UST report and conclusions
SMF 11-Rem	<b>Remediation</b>
SMF 11-Rem	Efficient and effective remediation
SMF 11-Rem	Remediation: benchmark against natural attenuation
SMF 11-Rem	MNA and NMNA
SMF 11-Rem	Design of ozone systems
SMF 11-Rem	Defining remediation objectives
SMF 11-Rem	Groundwater extraction
SMF 11-Rem	Pilot testing
SMF 11-Rem	Dual-phase extraction
SMF 11-Rem	Evolving technologies vetting process: regulators, RPs, consultants, Cleanup fund
SMF 11-Rem	Equipment sizing
SMF 11-Rem	Evolving technologies: standardized acceptance criteria for new technologies to meet
SMF 11-Rem	Evolving technology evaluation
SMF 11-Rem	Traditional remediation techniques
SMF 11-Rem	Design of vapor extraction systems and air sparging
SMF 11-Rem	Bioremediation
SMF 11-Rem	Excavation
SMF 11-Rem	Create new streamlined procedures for catastrophic releases: will be cost effective,
SMF 11-Rem	will benefit health and environment, must have exp. Access to fund built in.
SMF 12-Rpt	<b>Reporting</b>
SMF 12-Rpt	Consistent reporting
SMF 12-Rpt	Report content and requirements for landmark reports such as RAPs CAPs etc. similar
SMF 12-Rpt	to TriRegional Board guidelines
SMF 13-Clos	<b>Closure</b>
SMF 13-Clos	Site closure
SMF 13-Clos	Criteria (or factors to be considered or guidelines) required for closure
SMF 13-Clos	Site closure example
SMF 13-Clos	Closure appeal process
SMF 13-Clos	How to determine if a site meets water quality objectives
SMF 14-CF	<b>UST Fund</b>
SMF 14-CF	Fund guidance topic/overview
SMF 14-CF	Standardized invoice format
SMF 14-CF	Yearly project scope approval and cost pre-approval
SMF 14-CF	Consistent reporting format
SMF 02-PR	<b>Dispute Resolution</b>
SMF 02-PR	Resolving Disputes
SMF 02-PR	Expedited enforcement

## LOS ANGELES (LAX)

LAX 01-IP **Intro**

LAX 01-IP	How to use the LUFT Manual in conjunction with what other guidelines reference
LAX 01-IP	How to choose a consultant
LAX 01-IP	History section, Explaining the story about how/why tank regs were developed
LAX 01-IP	General flowchart from asst – remed – closure
LAX 01-IP	Flowcharts
LAX 02-PR	<b>Responsibilities</b>
LAX 02-PR	UST cleanup fund
LAX 02-PR	RP responsibilities
LAX 02-PR	Public participation
LAX 02-PR	Regulator responsibilities
LAX 02-PR	<b>Regulatory Responsibilities</b>
LAX 02-PR	Regulatory oversight authority
LAX 02-PR	Don't skip or skim over soil only cases
LAX 02-PR	Agency process for redevelopment of either closed or open cases (i.e. residential/mixed use)
LAX 02-PR	<b>RP –Regulator relations (subset of regulatory responsibilities)</b>
LAX 02-PR	New case gets initial meeting between RP, consultant and regulator to determine direction, timing, funding issues, etc.
LAX 02-PR	Required periodic case review meetings: initial, annual, biannual
	Include guidance on communication i.e. when to consider additional talks between RP, agency, stakeholders to keep project moving/on track. Examples are: Changes in land use/bldg footprint; New release, added RP atop old RP's active case; Technically complex project; and Major milestones (tech selection, delineation completion, etc.).
LAX 02-PR	Communication w/Regulator should be regular and routine
LAX 02-PR	Identify relationships
LAX 02-PR	Communication between RP, regulator and State Fund
LAX 04-CSM	<b>SCM</b>
LAX 04-CSM	Preliminary investigation defines whether remediation needs to be done or not
LAX 04-CSM	Decision making using the SCM (hypothesis, developing evidence, justification for remedy, closure or more investigation)
LAX 04-CSM	How to create a conceptual model
LAX 04-CSM	Using your SCM to get cleanup goals/closure criteria
LAX 04-CSM	Performing accurate sensitive receptor surveys early in process of assessment
LAX 04-CSM	Identifying nearby sensitive receptors
LAX 05-Saf	<b>Safety</b>
LAX 05-Saf	Safety considerations – Traffic, workers, public, utilities
LAX 05-Saf	Health and safety plans
LAX 07-Ass	<b>Site Characterization</b>
LAX 07-Ass	X-Y-Z plot showing concentrations @ depth with plume configuration
LAX 07-Ass	How to determine if your site is adequately characterized
LAX 07-Ass	Subsurface Geologic considerations when advancing borings and screening wells – Don't go through aquitards
LAX 07-Ass	Well design standards
LAX 07-Ass	Continuous coring assessment of Vapor Intrusion pathways
LAX 07-Ass	GW Depth-Discrete sampling. GW sampling methods
LAX 07-Ass	Soil gas surveys
LAX 07-Ass	Site assessment + include best/worst scenarios for their use (i.e. major do's and don'ts that distill best practices and learning)
LAX 07-Ass	Estimating mass in soil and GW
LAX 07-Ass	Permits need to be considered during site assessment and cleanup phases
LAX 07-Ass	What do you do, if substrate is all boulders? Thus you cannot drill
LAX 07-Ass	Strategies for investigating a new LUST site without harming the environment
LAX 07-Ass	Recommended characterization requirements
LAX 07-Ass	Soil sampling (techniques for procedures)

LAX 08-Ana	<b>Lab Analytical</b>
LAX 08-Ana	Standard Analytical methods
LAX 06-Wkp	Use of Data Quality Objectives to assure representative and statistically significant data collection
LAX 08-Ana	Analytical requirements
LAX 08-Ana	Testing for ethanol and methanol
LAX 08-Ana	Analytical requirements for soil/groundwater/vapor
LAX 08-Ana	Identify PQLs/MDLs/DL standards for each COPC
LAX 08-Ana	Method detection limits
LAX 08-Ana	Fuel oxygenates
LAX 08-Ana	Fuel oxygenates – MTBE, TBA- ethanol a concern? Upcoming/emerging alternative fuels
LAX 08-Ana	Reference to current EPA methods
LAX 09-RA	<b>Risk assessment and management</b>
LAX 09-RA	Risk management
LAX 09-RA	Health risk assessment
LAX 09-RA	Vapor intrusion (Johnson and Ettinger)
LAX 09-RA	Modeling for assessing vapor intrusion
LAX 09-RA	Sites near existing wells must have monitoring for leakage (to allow for appropriate responses)
LAX 09-RA	COC mass flux considerations
LAX 09-RA	Plume stability evaluation
LAX 09-RA	Risk-based site closures
LAX 09-RA	Risk-based cleanup levels
LAX 09-RA	Vapor intrusion guidance
LAX 09-RA	Don't skip over soil-only cases
LAX 09-RA	Degree of cleanup (amount and speed)
LAX 09-RA	Increase near existing wells
LAX 09-RA	Modeling tools
LAX 11-Rem	<b>Remediation</b>
LAX 11-Rem	Soil excavation
LAX 11-Rem	Natural Attenuation
LAX 11-Rem	SVE Rebound test procedures + what constitutes significant rebound
LAX 11-Rem	Remediation performance optimization
LAX 11-Rem	Indicators of natural attenuation
LAX 11-Rem	During technology selection, balancing cleanup goals w/Greenhouse Gas (GHG) emissions/carbon footprint generated (refer to GHG calc std docs)
LAX 11-Rem	Interim remedial actions
LAX 11-Rem	In Situ GW remediation techniques (which ones work; techniques/steps)
LAX 11-Rem	How to perform an SVE pilot test
LAX 11-Rem	<b>Technology Selection</b>
LAX 11-Rem	Sustainable remediation considerations – i.e. Carbon Footprint, GHG generation
LAX 11-Rem	Best demonstrated technology
LAX 11-Rem	Best practice case studies/Suggestions for complex or difficult hydrogeologic situations e.g., NAPL recovery; Fractured bedrock; Submerged soil impact zones (perhaps as part of technology selection or assessment technology selection);
LAX 11-Rem	Evaluation of Remediation technologies; Technology selection criteria
LAX 13-Clos	<b>Closure considerations</b>
LAX 13-Clos	Cleanup standard
LAX 13-Clos	Setting risk-based closure goals at low risk sites
LAX 13-Clos	Cleanup goals and/or levels
LAX 13-Clos	Determining appropriate cleanup goal – “How clean is clean”?
LAX 13-Clos	Standard soil clean-up guidelines
LAX 13-Clos	Specific Cleanup goals

LAX 13-Clos	Institutional controls
LAX 13-Clos	USER-friendly state-wide deed restriction database used by all agencies
LAX 13-Clos	Establish risk-based cleanup levels following completion of assessment
LAX 13-Clos	Performance-based closure goals (i.e. 90% reduction of influent concentrations)
LAX 13-Clos	Closure criteria - Numbers?, Common sense!
LAX 13-Clos	Ethanol cleanup goals
LAX 13-Clos	Groundwater cleanup goals should be site specific, not driven by general MCLs
LAX 13-Clos	Use of land use restrictions in setting up-front clean up levels
LAX 13-Clos	Estimating residual contamination in soil and groundwater
LAX 13-Clos	Setting acceptable cleanup timeframes
LAX 13-Clos	Reasonable timeframes
LAX 14-CF	<b>UST Cleanup Fund</b>
LAX 14-CF	Only cost-effective remedial activities to be reimbursed (i.e., cutoff of SVE activities when removal diminishes)
LAX 14-CF	Fund pre-approval

## OAKLAND (OAK)

OAK 01-IP	<b>Intro/Process</b>
OAK 01-IP	Roadmap to no further action needs to be provided in Chapter 1
OAK 01-IP	Develop communication - processes, frequency, face-to-face/electronically
OAK 01-IP	Audience = all stakeholders
OAK 01-IP	Regulations and policy affecting process
OAK 01-IP	Endorsement meatball
OAK 01-IP	Basic science and what you need to know (refer to peer reviewed reference documents)
OAK 01-IP	Community participation
OAK 06-Wkp	<b>Workplan</b>
OAK 06-Wkp	The comprehensive workplan - as compared to an iterative wkp, description of assessment goals/objectives, description of decision tree/flow chart, timeline and interim reporting (progress reporting format)
OAK 06-Wkp	Workplan objectives and rationale
OAK 06-Wkp	Workplan development guidelines
OAK 06-Wkp	Data quality objectives clearly stated
OAK 06-Wkp	Process for developing an adaptive workplan
OAK 06-Wkp	Present rationale for proposed scope of work
OAK 04-CSM	<b>Conceptual Site Models</b>
OAK 04-CSM	Importance of and how to prepare a CSM (example of acceptable model)
OAK 04-CSM	Complete CSM - site assessment, risk assessment, identify data gaps, propose recommendations
OAK 04-CSM	CSM with a risk-based assessment component
OAK 04-CSM	Robust CSM
OAK 04-CSM	Prepare flow chart for CSM development
OAK 04-CSM	CSM must be developed prior to corrective action
OAK 04-CSM	Fate & transport
OAK 04-CSM	Beneficial use of groundwater
OAK 07-Ass	<b>Site Assessment</b>
OAK 07-Ass	Need for adequate site assessment and continuous cores should be mandatory
OAK 07-Ass	Characterization of site stratigraphy to identify soil and groundwater sampling intervals
OAK 07-Ass	Rationale for selection of assessment tools/methods
OAK 07-Ass	Site assessment process
OAK 07-Ass	When can you use direct push technology?
OAK 07-Ass	CPT vs. continuous core for vertical delineation
OAK 07-Ass	Transects for horizontal and vertical characterization

OAK 07-Ass	Initial evaluation of groundwater vs. continuous evaluation
OAK 07-Ass	When to use grab groundwater & MW networks
OAK 07-Ass	Triad should be incorporated into process
OAK 07-Ass	Soil, groundwater, vapor
OAK 07-Ass	<b>Vapor</b>
OAK 07-Ass	Depth of sampling and protocol for vapor sampling
OAK 07-Ass	When do you need to assess the soil vapor pathway by specific sampling methods?
OAK 09-RA	<b>Risk</b>
OAK 09-RA	Use of risk assessment is inconsistent
OAK 09-RA	Low risk criteria
OAK 09-RA	Defined LRC criteria
OAK 09-RA	Post NFA risk-management - property redevelopment issues
OAK 10-CAP	<b>Corrective Action Planning</b>
OAK 10-CAP	CAP needs to have costs included
OAK 10-CAP	Prioritize sites by risk - why and how
OAK 10-CAP	Net environmental benefit analysis - applying metrics and uniform evaluative approach to quantify human and ecologic harm brought by a remedial alternative.
OAK 10-CAP	Community perception needs to be incorporated into CAP - public participation
OAK 10-CAP	Break CAP process up into more efficient pieces. For example, 1) demonstrate cleanup needed & where, 2) screen remedial technologies applicable to cleanup where needed, 3) test feasibility of more promising technologies, 4) prepare CAP, and 5) prepare RAP.
OAK 10-CAP	Pilot study
OAK 10-CAP	Solid feasibility study must be developed prior to remedial selection
OAK 10-CAP	What needs to be remediated? - discussion of toxicity, properties, lack of MCLs for petroleum hydrocarbons; discussion of the multiple regulations that may impact closure or remediation decisions (Title 27, Porter-Cologne, 68-16, etc.); discuss ideas for making the public more comfortable with leaving contamination in place (if remediation not required).
OAK 11-Rem	<b>Remediation</b>
OAK 11-Rem	Define all remediation options
OAK 11-Rem	Objectives of remedial actions
OAK 11-Rem	Factors affecting technology used for remedial action
OAK 11-Rem	How to evaluate if operation of remediation system is satisfying the remedial objective(s) - O&M reports should indicate and justify changes to system operation.
OAK 12-Rpt	<b>Report Requirements</b>
OAK 12-Rpt	Sample report
OAK 12-Rpt	Report contents
OAK 12-Rpt	Guidelines for cross-sections
OAK 12-Rpt	Professionals must show responsibility for work completed
OAK 13-Clos	<b>Closure</b>
OAK 13-Clos	Site closure methodology
OAK 13-Clos	Low risk criteria
OAK 13-Clos	Closure vs. clean
OAK 13-Clos	Road map to closure
OAK 13-Clos	What conditions could allow engineering controls
OAK 13-Clos	Defined LRC criteria
OAK 13-Clos	Institutional controls
OAK 13-Clos	Post NFA risk-management - property redevelopment issues
OAK 13-Clos	Guidance on using various cleanup goals
OAK 17-App	<b>Appendices</b>

OAK 17-App	Case studies
OAK 17-App	Analytical sampling guidelines
OAK 17-App	Legal precedents
OAK 17-App	Well construction guidelines
OAK 17-App	Lab analysis, groundwater chemistry, QA/QC, soil chemistry.
OAK 17-App	Common pitfalls, lessons learned (can go across board in each chapter)
OAK 17-App	Define milestones for peer review
OAK 17-App	Sample documents (training/guidance for new folks)
OAK 17-App	Enumerate Geotracker requirements (whole chapter)
OAK 17-App	Toxicity of TPH constituents
OAK 17-App	Appendix containing explanation of TPH analyses - silica gel, sediment removal, degradation product chemistry, Dawn Zemo.
OAK 17-App	Useful information from other states' LUFT manuals

## ORANGE COUNTY (SNA)

SNA 01-IP	Laws, Regulations, Policy Guidelines defined
SNA 01-IP	<b>Introduction/Purpose</b>
SNA 01-IP	CHHSL and PRG screening level's role; relationship between existing tools and the LUFT manual (purpose of the LUFT Manual)
SNA 01-IP	How existing tools for screening (i.e. CHHSL and PRGs, soil gas procedures) fit into the process of cleaning up and assessing a leaking UST
SNA 01-IP	Sustainability
SNA 03-SP	<b>Standards of Practices</b>
SNA 03-SP	Include requirement for PG/PE licenses in manual
SNA 03-SP	Business and Professional (7800 et seq.) Code/ Licensing Requirements (Title 16, Div. 29, Section 3065)
SNA 03-SP	For RPs - follow guidance in business or professions code when selecting a consultant
SNA 03-SP	Remedy(ies) - Regulator misconduct (an avenue to correct abuse)
SNA 07-Ass	<b>Site Characterization</b>
SNA 07-Ass	Describe all available methodologies for assessment and applicable situations for use
SNA 04-CSM	Developing a robust site conceptual model
SNA 07-Ass	Standardize guidelines for robust SCMs, site assessment, RBCA that we can use across the board for consultants, RPs and regulators
SNA 07-Ass	Advantages and limitations of assessment technologies
SNA 07-Ass	Well design for different uses
SNA 07-Ass	Rapid characterization approaches
SNA 07-Ass	Good guidance for site characterization and risk assessment
SNA 07-Ass	<b>Methodology</b>
SNA 07-Ass	well development
SNA 07-Ass	GW purging and sampling
SNA 07-Ass	<b>Soil Vapor</b>
SNA 07-Ass	when are soil gas studies required?
SNA 07-Ass	address SV/VI in manual
SNA 08-Ana	<b>Analytical Methods</b>
SNA 08-Ana	List pros and cons of various analytical methods
SNA 08-Ana	Standard analytical test methods for each UST type i.e. used oil tank - 8015 (CCID or modified for oil), VOC, SVOCs, metals, etc.);
SNA 08-Ana	Diesel fuel tank - 8015 (CCID or modified for diesel/fuel), VOCs, SVOCs/PAHs, etc., etc.
SNA 08-Ana	Gas tank - 8015 (CCID or modified for gas), VOCs, metals, etc.
SNA 09-RA	<b>Risk Evaluation</b>

	Risk Assessment Definition Consistency Tiers
SNA 09-RA	(Human health, geological, GW)
SNA 09-RA	Fate and Transport
SNA 09-RA	Contact list of specialized regulators who can review risk assessments/RBCA
	Define methodology for prioritizing sites. Based on the priority develop RA and
SNA 09-RA	closure criteria
	Site-specific Risk-Based closure goals
SNA 09-RA	Potential tiered approaches based on risk
SNA 09-RA	Consistency in evaluation of site threat
SNA 09-RA	Health risk assessment
SNA 11-Rem	<b>Remediation Technology</b>
SNA 11-Rem	Perceptions of Remediation Technologies: DPE, SBE, Air sparge, in situ, sustainability.
SNA 11-Rem	Data reporting during interim remedial actions (USEPA guidelines)
SNA 11-Rem	Monitored Natural Attenuation
SNA 11-Rem	Calculating Carbon Footprint for remediation technology
SNA 12-Rpt	Steps for utilizing Geotracker
SNA 12-Rpt	Geotracker access options (i.e. reports)
SNA 12-Rpt	Recommend Geotracker naming scheme for uploads
SNA 13-Clos	<b>Case Closure</b>
SNA 13-Clos	Petition process
SNA 13-Clos	Specify closure criteria [conceptual]
SNA 13-Clos	Closure report template/ consistent format
SNA 13-Clos	Use of engineered controls or deed restrictions to advance closure
SNA 13-Clos	Confirmatory sampling @ cessation of remediation
SNA	<b>Misc</b>
SNA 13-Clos	Dormant site status
SNA 17-App	<b>Glossary</b>
SNA 17-App	Section w/terminology and/or definitions (increase consistency between agencies)
SNA 16-Ref	<b>References and Resources</b>
	Make recommendations of existing tools (public ones) that can be used to help
SNA 16-Ref	accomplish tasks - reference where to get info and say how it fits in the LUFT manual
	Glossary giving guidance to tools - ex. NAPL by API Cal EPA - Vapor intrusion
SNA 17-App	monitoring, etc.
SNA 17-App	Include site-specific examples